U. S. DEPARTMENT OF COMMERCE

CIVIL AERONAUTICS JOURNAL

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VOLUME 2 WASHINGTON, AUGUST 15, 1941 NUMBER 16

Projects on 288 Airports Will Cost $80,000,000

Administrator Connolly Announces Locations

Construction or improvement projects on 288 airports in the United States, approved by a board consisting of the Secretaries of War, Navy, and Commerce as necessary to the national defense, have been announced by Brig. Gen. Donald H. Connolly, head of the Civil Aeronautics Administration, which will have charge of the work.

The locations announced involve a total estimated expenditure of $80,810,110, of which $53,409,800 will be spent on 26 locations in the initial program but not yet placed under construction and 149 new locations in the continental United States. "New" locations mean those not heretofore included in the C. A. A. program. A total of $18,968,871 will go toward continuing work on 113 other projects in the United States started in the initial program authorized last October.

Work on 216 of the projects will be by contract, with bids to be advertised within from 60 to 90 days. Eighty-seven projects will be executed by the WPA, while 15 of the projects will involve both contract and WPA work.

It is expected that all work will be completed sometime shortly after the first of the year. In the over-all Civil Aeronautics Administration airport program, which began last October, completion of the present program will mean that the national total of airports will be increased by 246 Class Three ports, 43 Class Four, 14 Class Two and two seaplane ramps as a result of the C. A. A. program. Class ratings are by runway lengths, Class One having runways of 2,500 feet or less; Class Two, 2,500–3,500; Class Three, 3,500–4,500; and Class Four 4,500 or more.

Airport construction and improvement projects under the supervision of the C. A. A. are limited to ports owned in fee simple by local governmental authorities. The work undertaken on these airports is restricted to the development of landing facilities. All other improvements, including hangars and other buildings, must be done by local enterprises or local government. The ports must be operated in the general public interest, must remain in public ownership, and local government must agree to maintain and operate them.

The program was authorized by appropriations aggregating more than $94,977,750 made by Congress early in the summer and available July 1.

"No recommendations for improvements or construction were made until a thorough survey by airport engineers established the value of the locations to national defense," Brig. Gen. Connolly stated in issuing the list of ports to be improved. "However, while the airports have been selected to meet defense requirements, every effort has been made to select sites offering future value to commercial and civil aviation, thus insuring a permanent return from this defense investment."

Work will be directed by Lt. Col. Lucius D. Clay, assistant to Administrator Connolly, who was detailed from

(*See* AIRPORTS, *page 211*)

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C. A. A. Pilot Trainees Join Army and Navy At Increasing Rate

The Army and Navy are relying to an increasing degree on the Civil Aeronautics Administration's pilot-training courses to supply flying cadet recruits for their air arms, according to statistics released by Brig. Gen. Donald H. Connolly, Administrator of Civil Aeronautics. Analyses for June reveal that 39 percent of all cadets joining the Naval Air Reserve and 31.6 percent of those entering the Army Air Corps are C. A. A. pilot trainees, General Connolly announced.

Connolly said that on the basis of official Army and Navy records the ratio of C. C. A. boys among Naval aviation enlistments was 44 percent greater during June than during the preceding 3 months, and, among Air Corps enlistments, the ratio was 37 percent greater. He attributed the larger Navy increase to the fact that the Navy gives C. A. A. advanced students credit for 43 hours of flying, whereas the Army does not.

"The trend," General Connolly declared, "confirming our prediction that there would be a rush of C. A. A. trainees to the colors at the end of the school year, since the bulk of them are college students. We have every reason to expect that the showing will be even better when statistics are available on the Army's July entering class, which should include many C. A. A. trainees who had not completed their college term by June 6, when the previous Army class began."

A total of 7,400 C. A. A. trainees had volunteered and been accepted for Army

(*See* PILOTS, *page 215*)

U. S. DEPARTMENT OF COMMERCE

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ISSUED TWICE MONTHLY BY THE CIVIL AERONAUTICS ADMINISTRATION

VOL. 2 AUGUST 15, 1941 NO. 16

Published with the approval of the Director of the Bureau of the Budget

Issued on the 1st and 15th of each month. Subscription $1 (foreign $1.50) per year. Single copies 5 cents. Sold by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.

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Aircraft Liability Problems Explained In C. A. B. Report

The Federal Government should define liability in aircraft accidents, and be empowered to compel all classes of aircraft operators to carry liability insurance, according to a staff report and recommendation released by the Civil Aeronautics Board.

The 520-page report, the most exhaustive study yet prepared on aviation liability, has not been adopted by the Board but has been released in order to draw critical comments.

While suggesting the adoption of a comprehensive Federal aviation liability statute, the report criticizes present laws governing accident liability as not being particularly well adapted to aviation, and observes that injured passengers are frequently at a disadvantage because of the expense, delay, and uncertainly involved in present-day litigation. The report recommends against the enactment of any State aviation liability laws.

Besides reviewing the entire question of who owes whom after aircraft accidents, the study, conducted by Edward C. Sweeney, legal expert on the staff of the Board's general counsel, shows that insurance settlements for airline fatalities have been liberal compared with those for auto, bus, or railroad accidents, an average of $11,144 per death having been paid over a 5-year period to satisfy claims for passenger deaths on airlines.

Possible legislation covering aircraft liability has been under consideration for a number of years by legal committees of several organizations. In 1938 a "Uniform State Aviation Liability Act" was approved by the National Conference of Commissioners on Uniform State Laws. The commissioners withheld sponsoring this act in the various State legislatures, however, in order that the Board might study the entire problem and formulate its recommendations.

– Keep 'Em Flying –

Hunsaker Elected N. A. C. A. President

Dr. Jerome C. Hunsaker, Boston, Mass., head of the Department of Mechanical Engineering at Massachusetts Institute of Technology, has been elected chairman of the National Advisory Committee for Aeronautics. He succeeds Dr. Vannevar Bush, who resigned to become Director of the newly-created Office of Scientific Research and Development.

Dr. W. F. Durand, Palo Alto, Calif., one of the original members of the N. A. C. A., has been reappointed to the Committee to succeed Dr. Robert E. Doherty, resigned.

Toward Safer Flight:

To insure that aircraft used in the secondary stage of the Civilian Pilot Training Program can execute safely the maneuvers given in the course, Flight Engineering and Factory Inspection Section personnel of the Civil Aeronautics Administration give each airplane comprehensive and exhaustive flight tests before releasing them for use.

Instruction in aerial acrobatic maneuvers is a definite and essential part of the advanced C. P. T. P. courses—not to allow the students to "show off"—but to familiarize them with the various attitudes into which an aircraft may fall, often unintentionally, and to demonstrate methods for safe recovery.

In testing the aircraft for these maneuvers, which are listed as "critical," the first step is the checking of the structures of the planes to see that they are suitable for the work they will be called upon to do. Then it must be determined whether they will perform and safely recover from the maneuvers to which they will be subjected, a procedure which might be described as "safety insurance."

The maneuvers selected for these tests are those which are most likely to get the pilot into trouble, either through some structural failure of the aircraft, or because of some error on the part of the pilot himself.

During such tests, the inspectors execute the maneuvers as they would be carried out by the instructors, and then go a step further and simulate, or try to simulate, the maneuvers as they would be performed by students. In this manner they endeavor to subject the plane to every test it will have to face when used in actual flight instruction.

An accelerometer is installed during all of these acrobatic maneuvers and a careful record is made of the vertical accelerations encountered. These normally increase with an increase in the speed of entry into the maneuver, and the highest safe speed for entry into any maneuver is thus accurately determined. For example, in checking the snap roll it may be found that when the roll is started at 80 m. p. h., using the entry technique that may be expected from a student, vertical accelerations of 3 may be found; 90 m. p. h. entry may show 4 g and 95 m. p. h. 5 g. In such circumstances 85 m. p. h. would be the entry speed recommended for

(*See* FLIGHT TEST, *page 215*)

Summary of Active Certificates

(As of August 1, 1941)

Pilot certificates of competency	84,152
Airline transport certificates of competency	1,515
Student pilot certificates	91,294
Glider pilot certificates of competency	146
Student glider pilot certificates	534
Mechanic certificates of competency	13,941
Parachute rigger certificates of competency	484
Certificated aircraft	22,508
Uncertificated aircraft	438
Certificated gliders	52
Uncertificated gliders	104
Ground instructors certificates of competency	3,739
Air-traffic control-tower operators certificates of competency	388
Air carrier dispatchers certificates of competency	413

Pilot Tests Planned For Applicants With Physical Handicaps

Certain classes of physically handicapped individuals who have applied for pilot certificates will be given special flight tests, the Civil Aeronautics Administration has announced.

In order to aid in determining the effects of such deficiencies as the loss of a hand, arm, foot or leg, or stiffened joints, on the safe operation of aircraft, a flight test to be given by an inspector of the Administration may in some cases be authorized by the Chief of the Medical Division. Such authorization, however, will not be given if the physical defect in question is a progressive organic disease, or if the defect itself is so severe that no practical purpose would be served by allowing the applicant to risk his own safety and that of others in performing the tasks.

In giving these tests, the inspectors will endeavor to determine whether or not the defect described does or may interfere with the safe operation of aircraft controls, bearing in mind the differences in the controls of various types of aircraft, types of brakes, stabilizer locations, and methods of operations, etc. Full information regarding these tests is contained in Certificate and Inspection Division Release No. 55, which may be obtained from the Publications and Statistics Division, Civil Aeronautics Administration, Washington, D. C.

Correction

On page 190 of the CIVIL AERONAUTICS JOURNAL for August 1, 1941, the headquarters for C. A. A. Region 1 was incorrectly listed as Newark, N. J. Region 1 headquarters are located at LaGuardia Field, New York, N. Y.

Private Flying

CAR Amendment No. 115 Provides Simplified Pilot Rating System

New Procedure Explained In Division's Release

(The Civil Aeronautics Board on June 6 adopted Amendment No. 115 of the Civil Air Regulations, providing for a simplified system of pilot rating procedure. A comprehensive explanation of the various provisions of the amendment, which became effective on August 1, has been prepared by the Civil Aeronautics Administration. Because of the importance of the new rating system, the explanation, contained in Certificate and Inspection Division Release No. 54, is printed in full here.)

Pilot Rating Procedure—A Simplified System, Effective August 1, 1941

A rationalized and simplified system for the rating of pilots with respect to the aircraft which they are deemed competent to pilot has recently been adopted in the form of amendment No. 115 to parts 20 and 21 of the Civil Air Regulations. The new system is based upon the type, class, and horsepower of the aircraft rather than the type, weight, and engine classification which has demonstrated numerous inconsistencies in actual practice.

The general aircraft types are: 1. Airplane, 2. Autogiro, 3. Glider, and 4. Lighter-than-air.

These are similar to the present type classifications except for the land and water designations.

In the case of the first type, that is, airplane, there is a further breakdown as to class. These classes are: 1. Single-engine, land, 2. Single-engine, sea, 3. Multi-engine, land, 4. Multi-engine, sea, and 5. Unconventional.

Furthermore, in the case of an airplane, the pilot is also rated with respect to horsepower, it having been determined that, in general, horsepower is a somewhat better criterion of handling characteristics than weight. In order to avoid the inconsistencies inherent in the present weight classification whereby a pilot may demonstrate competence at one extreme end of the class and be eligible also for the other extreme, the new system divorces the classification from the airplane and rates each pilot for a range of horsepower based upon the horsepower of the airplane in which he demonstrates competence.

With one exception which will be explained below, this range is from 50 percent less to 50 percent greater than the rated horsepower of this airplane. This automatically provides for checking out in the middle of the range instead of at any point in the weight range as at present.

Because of the general similarity in handling characteristics of present day airplanes of 80 or less horsepower, and the large number of pilots being trained in such airplanes, the percentage system is not made applicable within that range. In other words, if a pilot demonstrates competence in an airplane of 80 or less horsepower, he is rated for that entire range, but if he demonstrates competence at more than 80 horsepower, he is rated on the percentage basis, except that the lower limit will not be less than 80.

If, however, a pilot becomes eligible for two ranges, he will become eligible for all intermediate horsepowers and will be rated from the lowest to the highest horsepower applicable. For example, if an applicant takes a flight test in an airplane of 65 horsepower, he is rated for 80 or less horsepower. If he subsequently takes a rating flight test in an airplane of 200 horsepower, he will be rated, not for 100 to 300 horsepower in addition to his previous range, but for 300 or less horsepower.

Class Ratings

It should be noted that the class and horsepower ratings are applicable only to the airplane type, and not to autogiro, glider, and lighter-than-air aircraft.

Another simplification of the new system is the provision that all the class ratings which a pilot holds apply to the entire horsepower range for which he has demonstrated competence. In other words, if a pilot has demonstrated competence for both single-engine landplanes and single-engine seaplanes, he would be qualified to pilot all airplanes of both of these classes within his entire horsepower range even though he might have been tested in a low-powered seaplane and a high-

(*See* RATINGS, *page 212*)

Air Transportation

C. A. B. Defers Action on Certificate Applications of 38 Alaska Airlines

Further Study Needed, Contention of Board

As a step toward insuring that Alaska will ultimately be provided with the highest type of air service suitable for conditions there, the Civil Aeronautics Board has decided to withhold consideration of 38 applicants for certificates of convenience and necessity for the Territory until it has made a further study of the unusual circumstances met with in Alaskan air transportation.

Alaskan air service, the Board found, is surrounded by circumstances so different from those present in the continental United States that further consideration should be given to problems of general regulatory policy, including possible need for legislative action, until Alaskan opinion on those subjects has been further developed. The Board has found that besides considerations of terrain, weather, distance, and public convenience peculiar to the Territory, air transportation in Alaska holds a unique position of importance because many points are inaccessible by ground transportation.

This action by the Board puts into effect for the first time a classification of air carriers, establishing a classification of "Alaskan Air Carriers." The 38 Alaskan air carriers whose applications were considered by the Board have been temporarily exempted from the economic regulatory provisions of the Act, and may continue operations as heretofore until completion of the further study ordered by the Board. Any new applicants, however, will be required to apply to the Board before beginning operations. Pan American Airways, Inc., which operates between Seattle and points in Alaska has already been granted a certificate for this service.

For the further study of the Alaskan situation the Board has designated Raymond W. Stough, Director of the Economic Bureau, acting as examiner, who will be assisted by William J. Madden, acting as public counsel, to hold further hearings within the next 3 months in Anchorage, Fairbanks, and Juneau, after which the supplemental findings of the examiner will be submitted to the Board for its action.

The 38 applicants are:

(*See* ALASKA, *page 209*)

1940 Air Carrier Traffic Statistics

Air carrier traffic statistics for 1940, broken down to show results of individual companies and further classified to show operations figures for routes, are carried in the tables below.

Table A shows figures for the July–December periods of 1940 and 1939, and the totals for the two years; Table B shows statistics by companies for 1940; and Table C shows results by months during 1940 divided as to domestic, international, and territorial operations.

Statistical Summary

→

A 29.16 percent gain in revenue passenger miles and a 60.35 percent increase in express pound-miles flown by 16 domestic scheduled airlines in June 1941 as against June 1940 were shown in figures released by the Civil Aeronautics Administration.

The revenue passenger miles flown in June 1941 totaled 130,680,225 and the express pound-miles flown totaled 838,289,846. These figures represented definite gains over corresponding figures for the previous month which marked all-time highs. During May 1941 the 16 domestic airlines flew 122,809,564 revenue passenger miles and 814,617,980 express pound-miles.

During June 1941 the airlines carried 353,478 revenue passengers, an increase of 33.24 percent over the total for June 1940. The revenue miles flown in June 1941 were 11,471,787, a 20.13 percent increase over the revenue miles flown in June of last year.

The revenue passenger load factor in June 1941 was 64.14 percent, as against 64.01 percent in June 1940 and 59.56 percent in May 1941.

Table A.—*Air Carrier Operations Statistics for the 6-Month Period of July–December 1940 and 1939 and for the Calendar Years of 1940 and 1939*

DOMESTIC

	July–December 1940	July–December 1939	Percent of increase over 1939	1940	1939	Percent of increase over 1939
Revenue miles flown	59,778,775	45,388,594	31.70	108,800,436	82,571,523	31.77
Revenue passengers carried	1,576,362	1,025,345	53.74	2,727,820	1,717,090	58.86
Revenue passenger-miles flown	587,717,829	399,033,759	47.29	1,041,173,558	677,672,955	53.64
Express carried (pounds)	7,301,566	5,472,540	33.42	12,506,176	9,514,299	31.45
Express pound-miles flown	3,990,543,209	3,024,039,495	31.96	6,938,969,170	5,411,227,041	28.23
Mail pound-miles flown	[1]9,621,633,188	[1]9,041,270,347	15.58	[1]20,066,960,540	[1]17,169,782,735	16.92
Available passenger seat-miles flown	1,020,735,362	681,143,904	49.86	1,797,329,431	1,207,869,577	48.80
Revenue passenger load factor (percent)	57.58	58.58	----	57.93	56.10	----

INTERNATIONAL AND TERRITORIAL

Revenue miles flown	6,117,765	4,458,677	37.21	10,716,827	8,404,840	27.51
Revenue passengers carried	106,906	83,102	28.64	216,846	161,163	34.55
Revenue passenger-miles flown	59,584,427	44,537,198	33.79	111,248,022	78,168,601	42.32
Express carried (pounds)	848,865	798,371	6.32	1,682,002	1,397,956	20.32
Express pound-miles flown	[2]	[2]	----	[2]	[2]	----
Mail carried (pounds)	[2]	379,717	----	[2]	675,422	----
Available passenger seat-miles flown	108,856,195	79,482,659	36.96	195,307,808	144,900,393	34.79
Revenue passenger load factor (percent)	54.74	56.03	----	56.96	53.95	----

DOMESTIC, INTERNATIONAL, AND TERRITORIAL

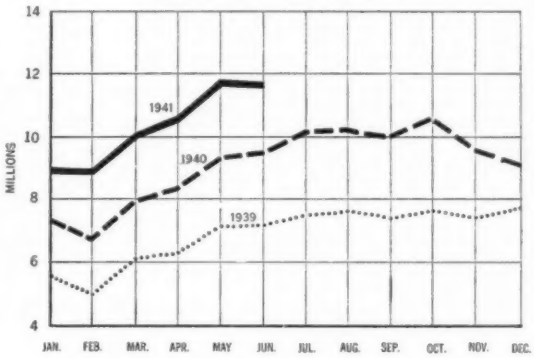
Revenue miles flown	65,896,540	49,847,271	32.20	119,517,263	90,976,063	31.37
Revenue passengers carried	1,683,268	1,108,447	51.86	2,944,666	1,878,253	56.78
Revenue passenger-miles flown	647,302,256	443,570,957	45.93	1,152,421,580	755,841,556	52.47
Express carried (pounds)	8,150,431	6,270,911	29.97	14,188,178	10,912,255	30.02
Available passenger seat-miles flown	1,129,591,557	760,626,563	48.51	1,992,637,239	1,352,769,970	47.30
Revenue passenger load factor (percent)	57.30	58.32	----	57.83	55.87	----

[1] Includes Inter-Island Airways, Ltd.
[2] Not available.

(*Tables continued on page 206*)

Domestic Air Carrier Traffic Statistics for 1939, 1940, and the First 6 Months of 1941

REVENUE MILES FLOWN



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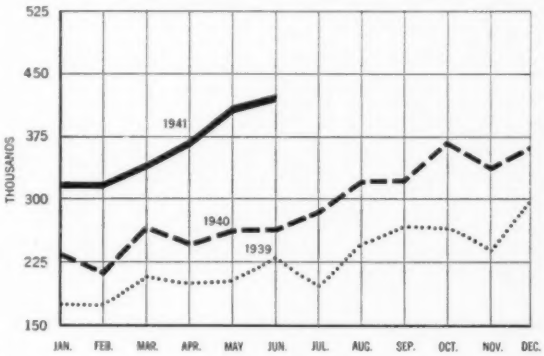

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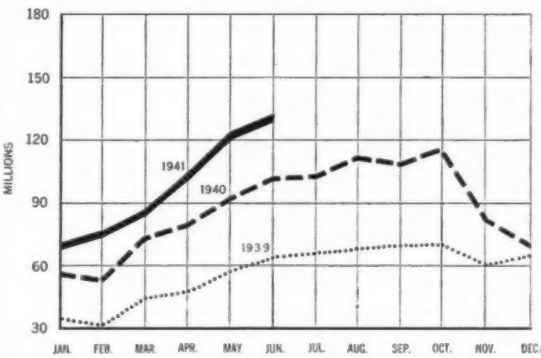
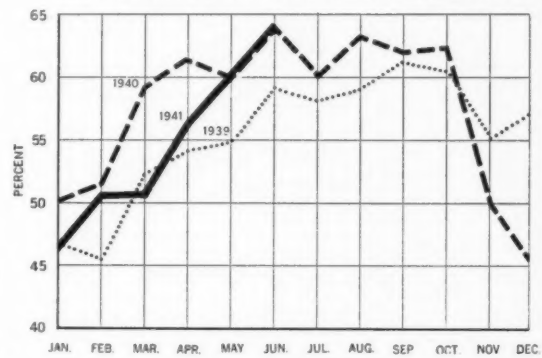


REVENUE PASSENGER LOAD FACTOR



Domestic Air Carrier Traffic Statistics for June 1941

Operator	Revenue miles flown		Revenue passengers carried		Revenue passenger miles flown		Express pound-miles flown		Revenue passenger load factor (percent)	
	June 1941	Percent change over 1940	June 1941	Percent change over 1940	June 1941	Percent change over 1940	June 1941	Percent change over 1940	June 1941	June 1940
American Airlines, Inc	2,894,391	24.18	113,607	34.78	39,299,312	29.21	214,323,440	56.11	73.57	74.09
Braniff Airways, Inc	445,509	9.25	13,297	35.32	3,996,141	29.90	16,872,695	42.69	49.19	47.24
Catalina Air Transport, Inc	18,360	—11.82	4,816	8.59	144,480	8.59	574,110	—20.51	77.70	66.43
Chicago & Southern Air Lines, Inc	190,973	9.48	5,379	18.43	2,079,368	20.52	10,969,966	76.37	55.91	51.05
Continental Air Lines, Inc	123,138	.20	1,952	30.13	567,999	21.68	723,423	30.39	38.43	51.53
Delta Air Corporation	253,102	24.81	7,103	55.22	1,939,011	57.06	3,998,984	95.31	42.76	50.66
Eastern Air Lines, Inc	1,577,124	24.38	43,970	44.09	16,285,774	34.41	110,563,432	78.21	52.21	53.49
Inland Air Lines, Inc	94,039	—5.18	1,211	—4.27	324,524	—1.85	658,004	115.84	34.51	33.34
Mid-Continent Airlines, Inc	190,522	42.29	3,557	75.65	907,334	58.02	1,744,905	72.09	43.98	42.88
National Airlines, Inc	119,508	37.80	2,590	64.55	643,668	70.04	1,177,662	89.33	41.36	40.03
Northeast Airlines, Inc	94,783	4.46	2,729	—4.41	435,642	1.75	529,337	18.64	45.75	47.19
Northwest Airlines, Inc	566,256	10.48	15,835	12.57	6,607,461	18.75	34,956,371	86.60	57.67	54.85
Pennsylvania-Central Airlines Corporation	556,688	46.31	31,851	47.07	6,189,198	55.26	21,491,452	55.61	57.03	61.40
Transcontinental & Western Air, Inc	1,789,753	29.27	43,540	37.57	20,411,663	36.87	149,864,491	92.95	64.73	65.94
United Air Lines Transport Corporation	2,281,805	7.39	55,289	19.70	28,515,993	17.43	246,948,288	42.54	76.07	69.31
Western Air Express Corporation	275,836	41.77	6,752	56.59	2,332,657	50.05	22,893,286	40.28	55.09	62.05
Total	11,471,787	20.13	353,478	33.24	130,680,225	29.16	838,289,846	60.35	64.14	64.01

Table B.—*Air Carrier Operations Statistics for the Year 1940*

Operator	Domestic routes operated	Months operated	Revenue miles flown	Revenue passengers carried	Revenue passenger miles flown	Express carried (pounds)	Express pound-miles flown	Mail pound-miles flown	Revenue passenger load factor (percent)
American Airlines, Inc.	Dallas to Los Angeles	12	4,201,836	49,079	44,709,009	319,822	375,488,596	1,400,507,217	
	New York to Chicago	12	7,285,158	234,037	93,667,533	1,606,044	797,040,894	1,053,926,901	
	Boston to New York	12	2,678,158	234,934	40,457,480	495,500	81,479,499	147,110,486	
	Boston to Cleveland	12	843,891	37,923	6,755,450	108,262	16,828,126	22,843,902	
	Cleveland to Nashville	12	888,837	47,878	9,057,974	136,451	31,830,668	56,139,150	
	New York to Fort Worth	12	6,705,452	141,374	68,987,642	520,511	438,291,300	1,390,641,906	
	Washington to Chicago	12	2,041,777	68,588	24,705,711	149,868	50,091,138	127,470,469	
	Chicago to Fort Worth	12	1,907,372	57,117	23,405,890	203,523	118,636,708	321,001,659	
	Total		26,642,481	870,930	311,746,689	3,539,981	1,909,686,938	4,519,641,690	66.71
Braniff Airways, Inc.	Chicago to Dallas	12	1,848,153	35,322	16,758,061	164,935	112,604,039	342,093,437	
	Amarillo to Brownsville	12	2,498,647	71,206	17,618,999	189,374	60,395,695	198,394,966	
	Houston to Corpus Christi and San Antonio.	12	313,898	8,880	1,653,162	4,188	780,356	2,095,836	
	Total		4,660,698	115,410	36,030,222	358,497	173,780,090	542,584,239	46.47
Catalina Air Transport [1]	Wilmington to Avalon	12	146,465	30,343	910,290	150,094	4,502,820	0	63.41
Chicago & Southern Airlines, Inc.	Chicago to New Orleans	12	1,943,951	42,019	15,973,503	156,716	72,865,979	253,341,965	49.68
Continental Air Lines, Inc.	Denver to El Paso	12	1,063,610	12,726	3,667,252	23,410	6,018,561	49,335,269	
	Pueblo to Wichita	12	272,252	2,584	985,902	3,644	1,401,052	14,633,111	
	Total		1,335,862	15,310	4,653,154	27,054	7,419,613	63,968,380	42.56
Delta Air Corporation	Charleston to Fort Worth	12	2,143,252	50,379	13,016,170	90,304	26,267,641	170,509,042	52.28
Eastern Air Lines, Inc.	New York to New Orelans	12	3,718,239	90,587	41,427,365	433,190	249,094,115	726,969,961	
	New York to Miami	12	6,851,200	166,343	72,476,926	675,087	489,138,847	1,281,657,749	
	Chicago to Jacksonville	12	2,692,049	67,954	30,802,233	227,395	106,981,034	371,851,831	
	New Orleans to Houston	12	719,436	18,074	6,055,399	76,433	26,487,139	88,867,728	
	Atlanta to Tampa; Tallahassee to Memphis.	12	1,010,164	13,922	4,207,705	100,314	13,849,961	60,739,738	
	Houston to San Antonio and Brownsville.	12	718,485	12,415	2,854,187	31,889	8,849,513	32,015,685	
	St. Louis to Nashville	4	51,186	1,302	308,535	1,196	258,386	833,495	
	Total		15,760,759	370,597	158,132,350	1,545,504	894,658,995	2,562,936,187	55.01
Inland Air Lines, Inc.	Cheyenne to Great Falls	12	734,299	9,072	2,382,435	14,137	3,633,334	20,366,634	
	Cheyenne to Huron	12	354,808	3,446	876,765	4,050	1,049,615	13,936,780	
	Total		1,089,107	12,518	3,259,200	18,187	4,682,949	34,303,414	29.93
Marquette Airlines, Inc.[2]	St. Louis to Detroit	7½	106,057	798	185,921	0	0	0	29.22
Mid-Continent Airlines, Inc.	Minot, Minneapolis to Tulsa	12	1,508,650	22,933	6,218,126	53,125	12,786,495	85,910,007	
	Minneapolis to St. Louis; Des Moines to Kansas City.	2	89,343	739	209,298	1,208	283,027	1,677,920	
	Total		1,597,993	23,672	6,427,424	54,333	13,069,522	87,587,927	36.18
National Airlines, Inc.	Jacksonville to Miami	12	684,222	13,441	2,439,149	28,174	5,213,444	42,250,316	
	Jacksonville to New Orleans	12	384,034	7,478	2,381,089	14,311	3,922,089	35,079,605	
	Total		1,068,256	20,919	4,820,238	42,485	9,135,533	77,329,921	43.36
Northeast Airlines, Inc.[3]	Boston to Caribou	12	546,716	18,799	2,654,755	25,071	3,777,560	13,446,421	
	Boston to Montreal	12	342,041	8,824	1,457,518	12,855	1,218,481	[4]	
	Total		888,757	27,623	4,112,273	37,926	4,996,041	13,446,421	46.45
Northwest Airlines, Inc.	Chicago to Winnipeg	7	1,369,960	43,774	14,839,874	196,570	65,142,239	312,809,209	
	Fargo to Seattle	7	1,920,593	24,953	12,010,634	81,012	64,218,936	465,181,922	
	Chicago to Seattle [5]	5	2,498,344	58,113	23,815,666	230,439	129,057,844	577,984,920	
	Minneapolis to Duluth	7	103,144	3,560	509,080	7,190	1,028,170	2,065,670	
	Total		5,892,041	130,400	51,175,254	515,211	259,447,189	1,358,041,721	44.22
Pennsylvania-Central Airlines Corp.	Norfolk to Detroit	12	2,364,980	148,536	27,221,993	660,774	118,461,054	241,840,463	
	Detroit to Milwaukee	12	835,078	41,788	6,412,721	137,735	21,028,541	20,015,611	
	Washington to Buffalo	12	238,082	3,768	891,259	20,350	2,518,866	5,307,564	
	Pittsburgh to Buffalo	12	229,223	4,731	956,104	8,525	1,774,804	318,930	
	Pittsburgh to Baltimore	12	144,367	5,184	890,050	11,695	1,742,103	0	
	Detroit to Sault Ste. Marie	12	258,045	5,557	1,014,856	17,871	1,738,934	4,568,036	
	Norfolk to Knoxville	2	44,612	573	112,887	95	6,000	661,709	
	Total		4,114,387	210,137	37,499,870	857,045	147,270,302	272,712,313	53.13
Transcontinental & Western Air, Inc.	New York to Los Angeles	12	10,642,731	201,655	103,148,096	1,096,289	775,896,845	3,274,540,917	
	Dayton to Chicago	12	501,266	17,257	4,015,317	131,053	31,977,439	44,037,562	
	Las Vegas to San Francisco	12	352,872	4,130	1,594,416	9,884	4,217,588	20,469,657	
	Phoenix to Las Vegas	12	203,377	3,661	541,013	7,454	384,351	3,092,522	
	Kansas City to New York	12	3,882,798	83,380	44,167,943	381,110	217,193,400	657,545,454	
	St. Louis to Detroit	4½	267,886	6,660	1,629,450	23,929	5,852,524	0	
	Total		15,850,930	316,743	155,096,235	1,649,719	1,035,522,147	3,999,686,112	57.74

See footnotes on following page.

Table B.—*Air Carrier Operations Statistics for the Year 1940*—Continued

Operator	Domestic routes operated	Months operated	Revenue miles flown	Revenue passengers carried	Revenue passenger miles flown	Express carried (pounds)	Express pound-miles flown	Mail pound-miles flown	Revenue passenger load factor (percent)
United Air Lines Transport Corp.	New York to San Francisco	12	15,742,092	240,948	151,025,297	2,031,718	1,875,325,790	4,742,082,224	
	San Diego to Seattle	12	5,461,905	165,298	58,858,825	723,348	247,204,970	732,740,685	
	Salt Lake City to Seattle	12	1,728,580	29,129	11,737,574	111,557	64,679,857	208,906,298	
	Cheyenne to Denver	12	242,354	7,240	709,341	30,071	2,953,821	9,556,566	
	Total		23,174,931	442,615	222,331,037	2,896,694	2,190,164,438	5,693,285,773	61.92
Western Air Lines, Inc.	San Diego to Salt Lake City	12	1,636,989	36,501	12,968,960	530,755	176,895,114	363,559,381	
	Salt Lake City to Great Falls	12	747,520	10,906	2,834,768	35,671	8,603,859	49,350,394	
	Total		2,384,509	47,407	15,803,728	566,426	185,498,973	412,909,775	40.04
	Total domestic routes		*108,800,436	2,727,820	1,041,173,558	12,506,176	6,938,969,170	*20 066 960 540 [6]	57.93
	INTERNATIONAL AND TERRITORIAL								
Canadian Colonial Airways, Inc.[7]	New York to Montreal	12	681,584	25,600	7,406,308	17,077	([8])	([8])	55.70
Inter-Island Airways, Ltd.	Honolulu to Hilo	12	362,158	23,499	3,444,533	93,014	15,566,162	[9] 4,675,660	
	Honolulu to Port Allen	12	78,000	5,130	602,160	24,920	2,990,360	([4])	
	Total		440,158	28,629	4,046,693	117,934	18,556,522	4,675,660	65.02
Pan American Airways, Inc.[9]	New York to Lisbon	12	750,876	5,445	10,225,003	2,633	([8])	([8])	
	New York to Bermuda	12							
	San Francisco to Hong Kong	12	1,032,014	3,130	10,921,296	72,831	([8])	([8])	
	Los Angeles-San Francisco to Auckland, N. Z.	6							
	Seattle to Juneau via Ketchikan	7	557,242	3,421	2,404,680	30,807	([8])	([8])	
	Juneau to Fairbanks	12							
	Fairbanks to Nome	12							
	Fairbanks to Bethel	12							
	Miami to Nassau	12	5,736,451	134,030	61,930,402	1,270,592	([8])	([8])	
	Miami to Havana	12							
	Miami to Barranquilla	12							
	Miami to Cristobal via Barranquilla	12							
	Miami to Cristobal via Kingston	12							
	Miami to Merida	12							
	Miami to Rio de Janeiro	12							
	Para to Rio de Janeiro via Barreiras	4							
	Rio de Janeiro to Buenos Aires via Asuncion.	12							
	Rio de Janeiro to Buenos Aires via Porto Alegre.	12							
	Kingston to Port au Prince	12							
	Port au Prince to Maracaibo	12							
	San Juan to Port of Spain	12							
	Brownsville to Cristobal	12							
	Cristobal to Port of Spain	12							
	Cristobal to Medellin	12							
	Cristobal to Balboa	12							
	Total		8,076,583	146,026	85,481,381	1,376,863	([8])	([8])	55.89
Pan American-Grace Airways, Inc.	Cristobal, Canal Zone to Buenos Aires via Santiago, Chile and Bolivia.	12	1,518,502	16,591	14,313,640	170,128	([8])	([8])	62.84
	Total international and territorial routes.		10,716,827	216,846	111,248,022	1,682,002	([8])	([8])	56.96
	Grand total		119,517,263	2,944,666	1,152,421,580	14,188,178	([8])	([8])	57.83
*The following operating statistics are not included in the above Domestic Air Carrier figures:									
All American Aviation, Inc.	Mail Pick-up Service		372,109					7,621,529	
Eastern Air Lines, Inc.	Autogiro Service from Philadelphia Post Office to Camden Airport.		7,944					286,662	

[1] Formerly Wilmington-Catalina Airline, Ltd.
[2] Operated by Transcontinental & Western Air, Inc., subsequent to Aug. 14, 1940.
[3] Formerly Boston-Maine Airways, Inc.
[4] Included in total above.
[5] Routes from Chicago to Winnipeg and Fargo to Seattle, combined Aug. 1, 1940, into new route Chicago to Seattle.
[6] Mail pound-miles flown by Inter-Island Airways, Ltd., listed under international and Territorial have been added to the total for domestic mail pound-miles flown as the mail carried by this company is under a domestic mail contract.
[7] Does not include the operations of Canadian Colonial Airways, Ltd.
[8] Not available.
[9] Does not include the following Pan American Airways affiliated companies: Pan Air do Brasil, Cia Mexicana de Aviacion and Cia Nacional Cubana de Aviacion.

Table C.—*Air Carrier Operations Statistics, by Months, for the Year 1940, Divided as to Domestic, International, and Territorial Operations*

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Number of operating carriers:													
Domestic	17	17	17	17	17	17	17	17	16	16	16	16	
International and territorial	4	4	4	4	4	4	4	4	4	4	4	4	
Total	21	21	21	21	21	21	21	21	20	20	20	20	
Revenue-miles flown:													
Domestic	7,271,154	6,672,914	7,930,038	8,331,759	9,266,687	9,549,109	10,120,569	10,223,149	10,084,445	10,635,210	9,573,378	9,142,024	108,800,436
International and territorial	713,657	735,650	805,662	739,644	806,136	798,313	1,005,965	1,027,119	1,024,673	1,042,205	974,871	1,042,932	10,716,827
Total	7,984,811	7,408,564	8,735,700	9,071,403	10,072,823	10,347,422	11,126,534	11,250,268	11,109,118	11,677,415	10,548,249	10,184,956	119,517,263
Revenue passengers carried:													
Domestic	136,282	126,840	178,332	206,407	238,300	265,297	275,847	298,453	287,450	311,406	219,804	183,402	2,727,820
International and territorial	17,139	21,445	22,531	17,462	15,377	15,986	17,219	20,028	16,955	17,408	15,864	19,432	216,846
Total	153,421	148,285	200,863	223,869	253,677	281,283	293,066	318,481	304,405	328,814	235,668	202,834	2,944,66
Revenue passenger-miles flown:													
Domestic	55,231,952	53,033,612	73,047,662	79,775,304	91,186,304	101,180,895	102,386,724	110,986,456	107,848,222	115,362,695	81,375,804	69,757,928	1,041,173,558
International and territorial	7,121,831	8,643,737	9,781,582	8,517,892	8,498,286	9,100,267	10,039,484	10,476,322	9,745,452	10,006,617	9,093,033	10,223,519	111,248,022
Total	62,353,783	61,677,349	82,829,244	88,293,196	99,684,590	110,281,162	112,426,208	121,462,778	117,593,674	125,369,312	90,468,837	79,981,447	1,152,421,580
Express carried (pounds):													
Domestic	817,633	697,385	894,581	871,317	941,810	981,884	1,056,599	1,201,999	1,184,249	1,329,843	1,205,261	1,323,615	12,506,176
International and territorial	136,103	125,579	135,913	156,906	136,750	141,886	137,803	132,339	139,042	131,283	141,993	166,405	1,682,002
Total	953,736	822,964	1,030,494	1,028,223	1,078,560	1,123,770	1,194,402	1,334,338	1,323,291	1,461,126	1,347,254	1,490,020	14,188,178
Express pound-miles flown:													
Domestic	463,898,988	422,394,234	525,401,290	491,114,049	522,817,135	522,800,265	570,817,288	641,523,568	645,933,371	733,834,979	674,219,640	724,214,363	6,938,969,170
International and territorial	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Total	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Mail pound-miles flown:													
Domestic [2]	1,534,408,814	1,499,673,303	1,680,965,576	1,627,442,686	1,682,136,183	1,597,006,626	1,633,804,555	1,718,072,039	1,672,572,065	1,865,152,340	1,666,901,329	1,888,825,024	20,066,960,540
International and territorial	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Total	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Available passenger-seat miles flown:													
Domestic	110,166,337	103,266,684	123,232,597	129,981,923	151,875,201	158,071,327	170,692,010	175,424,431	173,777,849	185,078,224	162,460,336	153,302,512	1,797,329,431
International and territorial	12,233,058	13,553,005	15,098,754	13,054,252	16,523,379	15,989,165	18,317,054	18,625,432	18,459,994	18,801,605	16,912,407	17,739,703	195,307,808
Total	122,399,395	116,819,689	138,331,351	143,036,175	168,398,580	174,060,492	189,009,064	194,049,863	192,237,843	203,879,829	179,372,743	171,042,215	1,992,637,239
Revenue passenger load factor (percent):													
Domestic	50.14	51.36	59.28	61.37	60.04	64.01	59.98	63.27	62.06	62.33	50.09	45.50	57.93
International and territorial	58.22	63.78	64.78	65.25	51.43	56.92	54.81	56.25	52.79	55.34	53.77	57.63	56.96
Total	50.94	52.80	59.88	61.73	59.20	63.36	59.48	62.59	61.17	61.49	50.44	46.76	57.83

[1] Not available.
[2] Includes Inter-Island Airways, Ltd.

British Airline Gets Transfer of Foreign Air Carrier Permits

The Civil Aeronautics Board has approved the application of British Overseas Airways Corporation for the transfer to it of the foreign air carrier permits which had previously been issued to Airways (Atlantic) Limited and to Imperial Airways (Bermuda) Limited, wholly owned subsidiaries of the applicant. The order authorizing the transfer was signed by President Roosevelt on July 18.

The foreign air carrier permit issued to Airways (Atlantic) Limited authorized the carrier to engage in scheduled foreign air transportation between a terminal point in the United States and a terminal point in the United Kingdom, via Canada, Newfoundland, and Ireland, or via Bermuda. The name of Imperial Airways (Bermuda) Limited recently was changed to Airways (Bermuda) Limited, and this corporation held a permit authorizing scheduled foreign air transportation between a terminal point in the United States and Bermuda. Consent of the present holders of both permits accompanied the application of British Overseas Airways. The original permits, under which there has been no recent operation, were issued pursuant to a "grandfather" right acquired prior to the passage of the Civil Aeronautics Act in 1938, as a result of an agreement between the governments concerned.

The Board found that it would be in the public interest to transfer the permits from the subsidiaries to the parent company, such transfers to be without prejudice, however, to the filing by British Overseas Airways Corporation of a future application for a further transfer of one or both of the permits to any other company controlled by the applicant as being in the public interest.

Alaska

(*Continued from page 204*)

Star Air Lines, Inc., Ackerman Air Service, Bristol Bay Air Service, Inc., Nat Browne Flying Service, Inc., Jack Carr Service, Christensen Air Service, Cordova Air Service, Inc., Dillingham Air Service, Larson-Alaskan Distributing Co., Lyle Airways, Leo Moore Flying Service, Peck and Rice Airways, Wm. M. Welsh, Woodley Airways. (Hearings on these applications will be held at Anchorage.)

Barr Air Transport, Lon Brennan Air Service, Jim Dodson Air Service, Ferguson Airways, Inc., Harold Gillam, Jack Hermann, Lavery Airways, Lynn Air Service, Mirow Air Service, Munz Air Service, Northern Cross, Inc., Pollack Flying Service, Reeve Airways, Schutte Air Service, Trans-Alaska Corporation, Wien Alaska Airlines, Inc., Robert R. Heard. (Hearings on these applications will be held at Fairbanks.)

Aircraft Charter Service, Inc., Alaska Air Transport, Inc., Ellis Air Transport, Marine Airways, Inc., Petersburg Air Service, Rinehart Seaplane Service, White Pass Airways, Inc. (Hearings on these applications will be held at Juneau.)

Catalina Service Extended

The Civil Aeronautics Board has granted authority to Catalina Air Transport to extend service from Avalon, Santa Catalina Island, to Los Angeles, Calif., by way of Wilmington-Long Beach, Calif., whenever this service is a part of through trips to and from Avalon. Inauguration of this service, however, will be postponed until such time as the Board notifies the carrier that the needs of national defense no longer requires postponement. Board action also made official the new name of the airline, which had been known as Wilmington-Catalina Airline, Ltd..

– Keep 'Em Flying –

New Service for TWA

The Civil Aeronautics Board has granted Transcontinental and Western Air, Inc., permission, effective August 1, 1941, for inauguration of nonstop service between Reading, Pa., and New York, N. Y., between Reading and Pittsburgh, Pa., and between Reading and Newark, N. J. At the same time the Board announced it had issued an order, also effective August 1, 1941, designating Reading as an intermediate point on TWA's route No. 2, which runs from New York and Newark to Los Angeles, Calif.

New Aeronautical Publications

Among recent government publications dealing with the subject of aeronautics are the following:

OFFICE OF EDUCATION; DEFENSE JOB TRAINING; condensed guide to programs authorized by Congress to train persons for work in defense industries and in the armed services. Price 5 cents. Classification number FS 5.2: D36/3.

WAR DEPARTMENT, TECHNICAL MANUAL 1–400; theory of flight. 182 pages, illustrated. Price 30 cents. Classification number W 1.35: 1–400.

When ordering these publications, send remittance by postal money order, express order, coupons, or check to the Superintendent of Documents, Government Printing Office, Washington, D. C. Always give title, issuing office, or classification number when listed.

– Keep 'Em Flying –

Legislative Action

Listed below are recent measures acted upon by Congress. A complete list of all proposed legislation appeared in Civil Aeronautics Journal, volume 2, No. 11, dated June 1, 1941, and subsequent issues.

H. R. 5510—DEFENSE HIGHWAY ACT OF 1941; authorized $2,000,000 for construction of flight strips; passed by the House July 21; conference report on S. 1580, DEFENSE HIGHWAY ACT OF 1941, agreed to by House on July 24; amendment authorized $10,000,000 instead of $2,000,000 for construction of flight strips.

H. Res. 277—The resolution providing for further expenses for the Select Committee to Investigate Air Accidents was passed by the House July 24.

Permission to Start New Mexican Route Denied Pan American

The Civil Aeronautics Board has denied the application of Pan American Airways, Inc., for a certificate of public convenience and necessity to operate between Los Angeles, Calif., and Mexico City, Mex., on the grounds that the service proposed, in the light of the commercial, postal, and national defense needs, is not required, and that any additional service required can be furnished by Compania Mexicana de Aviacion, S. A., one of Pan American's wholly owned affiliate companies.

Pan American's Mexican Company affiliate has been operating the Los Angeles-Mexico City service since 1936, and the Board issued a "grandfather" permit to that carrier on May 31, 1941. The Board stated that there had been a progressive growth of air traffic on this route and that a point had been reached where some measure of increased passenger service is required. However, it said, all the advantages set forth in Pan American's application could be realized by Pan American improving the schedules and service of its company now serving that route.

The Board concluded that "the service proposed by applicant will not serve a useful public service responsive to a public need; that the public purpose can be served adequately by existing transportation facilities; and that the cost of the proposed service to the Government will outweigh any benefit which will accrue to the public from such proposed service."

Pan American operates daily services between Brownsville, Tex., and Mexico City.

First-Aid Requirements Defined in Amendment

First-aid requirements for scheduled air carriers have been more definitely defined in an amendment to the Civil Air Regulations, announced recently by the Civil Aeronautics Board.

Heretofore the regulations merely stated that a first-aid kit must be carried. This amendment specifies that a conveniently accessible first-aid kit shall be carried, adequate for the proper first-aid treatment of the passengers and crew, and containing medical equipment and supplies suitable and sufficient for the type of operation for which the aircraft is certificated.

The carriers will have to supply the Administrator of Civil Aeronautics with lists of their first-aid equipment, for his approval, after meeting the requirements established by the regulation.

Full text of this amendment is carried on page 215.

Airways and Airports

Use of "Soil Cement" For Runways Tested At Army Air Field

Use of "soil cement" in paving roads and runways was the subject of recent demonstrations at the new army cantonment at Fort Wayne, Ind., according to Brig. Gen. Donald H. Connolly, Civil Aeronautics Administrator. The C. A. A. is coordinating the program.

Roadways in the cantonment present ideal conditions for conduct of the experiments since the nature of the traffic using them can be controlled and observations easily recorded. The new method has not been given a complete test as yet on runways, but the three runways in the new Air Corps field at Fort Wayne are being either wholly or partly paved with soil cement.

The U. S. Corps of Engineers, various equipment manufacturers, the Bureau of Public Roads, and other interested organizations are cooperating in the tests in charge of William M. Aldous, senior engineer of the Airport Development Section of the Technical Development Division of the C. A. A. A total of 20,000 square yards of roadway will be surfaced with the aid of newly developed equipment, and the effect of various mixes observed. The results of this test are expected to make possible correlation of laboratory and field work.

The method is to analyze the soil, determine whether it should be mixed with other kinds of soil, and then pulverize it to a depth of about 6 inches, removing all particles larger than one-quarter of an inch in size. From 6 to 10 percent of cement is mixed in with the necessary amount of water and the mixture is compacted with sheepsfoot rollers and then rolled.

The principal advantage of the system is economy, both for roads and runways. At the field, which is used as a base for pursuit planes, the two longest runways, each 6,200 feet long, are paved with a center strip of concrete 100 feet wide, with a strip of soil cement paving 90 feet wide on each side, and drainage strips of concrete 10 feet wide on the outside. The shorter runway, 5,200 feet long and 300 feet wide, is all paved with soil cement. These wide runways are designed for use by smaller military planes in mass take-offs and landings. The heavier planes use the center concrete section.

This job is being done by the Corps of Engineers for the Civil Aeronautics Administration, with A. H. Wait, Regional Airport Engineer at Chicago, supervising.

Airport Projects Approved

In accordance with the provisions of section 303 of the Civil Aeronautics Act, the Administrator of Civil Aeronautics has issued certificates of air navigation facility necessity, authorizing the expenditure of Federal funds in the operation of the following projects:

ARKANSAS	
Hope, Hope Airport (WPA)	$62,638
Little Rock, Municipal Airport (WPA)	304,194
CALIFORNIA	
Monterey, Municipal Airport (WPA)	1,133,514
Santa Monica, Municipal Airport (WPA)	88,900
COLORADO	
Trinidad, Municipal Airport (WPA)	16,157
FLORIDA	
Fort Myers, Lee County Airport (WPA)	83,206
Fort Myers, Lee County Airport (WPA)	22,696
Jacksonville, Municipal Airport (WPA)	17,610
GEORGIA	
Cordele, Municipal Airport (WPA)	32,911
ILLINOIS	
Peoria, Municipal Airport (WPA)	649,677
MAINE	
Auburn, Auburn-Lewiston Airport (WPA)	60,000
Pittsfield, Municipal Airport (WPA)	150,000
Presque Isle, Municipal Airport (WPA)	299,563
Princeton, Princeton Airport (WPA)	125,000
Sanford, Sanford Airport (WPA)	286,324
MARYLAND	
Baltimore, Municipal Airport (WPA)	854,161
Hagerstown, Municipal Airport (WPA)	226,692
MISSISSIPPI	
Brookhaven, Municipal Airport (WPA)	7,526
MISSOURI	
Dutchtown, Cape Girardeau County Airport (WPA)	194,370
Moberly, Moberly Airport (WPA)	167,236
NEW MEXICO	
Albuquerque, Albuquerque Airport (WPA)	8,907
NEW YORK	
Olean, Municipal Airport (WPA)	69,715
NORTH CAROLINA	
Elizabeth City, Elizabeth City Airport (WPA)	308,020
Kinston, Municipal Airport (WPA)	238,128
Wilmington, New Hanover County Airport (WPA)	398,380
OREGON	
Ontario, Municipal Airport (WPA)	272,250
PENNSYLVANIA	
Waynesburg, Municipal Airport (NYA)	2,700
RHODE ISLAND	
Westerly, Westerly Airport (WPA)	238,721
SOUTH CAROLINA	
Charleston, Municipal Airport (WPA)	11,236
SOUTH DAKOTA	
Sioux Falls, Municipal Airport (WPA)	35,553
TEXAS	
Brownsville, Pan American Municipal Airport (WPA)	218,732
Midland, Municipal Airport (WPA)	251,596
WISCONSIN	
Town of Lake, Milwaukee County Airport (CAA-WPA)	241,636
Town of Lake, Milwaukee County Airport (WPA)	29,673

Seaplane Directory Now Available

A new edition of the Directory of Seaplane Bases and Anchorages containing 361 listings has been prepared by the Flight Information Section of the Civil Aeronautics Administration, and is now available.

The 361 entries include 59 bases, 266 anchorages, and 36 military bases or anchorages distributed as follows: Navy 21, Coast Guard 11, Army 3, Marine Corps 1. Twenty of the bases or anchorages have some kind of lighting.

A "base," as defined in the directory, is a landing place with complete servicing facilities—floats, ramp, marine railways, dollies, hangars, repairs, fuel, etc.—whereas an "anchorage" has limited facilities, such as floats and fuel.

As of July 1940, there were 310 seaplane bases and anchorages on record with the C. A. A., 29 military, and 281 civilian. There were some lighting facilities at 14 bases or anchorages.

—Keep 'Em Flying—

2 Training Programs End

Completion of the Airport Servicemen's Training Program at two airports this month will bring the total number of training programs completed at the end of August to 34. The airports at which the programs were scheduled to be finished are Cleveland Municipal Airport, Cleveland, Ohio; and Pittsburgh-Bettis Airport, Pittsburgh, Pa.

Recognized Dealers

The Coast and Geodetic Survey has announced the addition of the following to the list of dealers authorized to sell charts:

Airport Manager, Washington National Airport, Washington, D. C.

Airports

(*Continued from page 201*)

the Army last fall to supervise C. A. A. airport defense work.

The list of new projects follows:

A

Abilene, Tex., $148,000; Adel, Ga., $218,000; Aiken, S. C., $392,000; Ajo, Ariz., $76,000; Albany, Ga., $136,000; Alexandria, La., $379,000; Allentown-Bethlehem, Pa., $90,000; Amarillo, Tex., $134,000; Americus, Ga., $28,000; Amherst, Mass., $266,000; Arlington, Tex., $490,000; Asheville, N. C., $57,000; Athens, Ga., $210,000; Atlanta, Ga. (Candler Field), $213,000; Auburn, Ala. (Auburn-Opelika), $268,000; Auburn-Lewiston, Maine, $54,000; and Augusta, Maine, $95,000.

B

Bainbridge, Ga., $278,000; Bangor, Maine (Municipal #1), $125,000; Bangor, Maine (Oldtown-Municipal #2), $296,000; Bar Harbor, Maine, $293,000; Barre-Montpelier, Vt., $53,000; Bartow, Fla., $217,000; Beaufort, S. C., $200,000; Bedford, Mass. (Boston Municipal #2), $290,000; Beeville, Tex., $198,000; Belfast, Maine, $137,000; Bellingham, Wash., $59,000; Big Spring, Tex., $25,000; Billings, Mont., $137,000; Bishop, Calif., $322,000; Bismarck, N. D., $165,000; Blackstone, Va., $197,000; Bowling Green, Ky., $332,000; Bozeman, Mont., $193,000; Bridgeport, Conn., $190,000; Brownsville, Tex., $437,000; Brunswick, Ga., $207,000; Brunswick, Maine, $90,000; Buffalo, N. Y., $204,000; Burlington, Vt., $64,670; and Butte, Mont., $33,000.

C

Casper, Wyo., $190,000; Cedar City, Utah, $287,000; Chehalis, Wash., $523,000; Claremont, N. H., $87,000; Clarksdale, Miss., $275,000; Clewiston, Fla., $257,000; Clovis, N. Mex., $268,000; Cobb County, Ga., $70,000; Coeur D'Alene, Idaho, $401,000; College Station, Tex., $75 000; Columbia, S. C. (Lexington County), $500,000; Columbus, Ga., $350,000; Concord, N. H., $379,000; Cordele, Ga., $200,000; Corpus Christi, Tex., $310,000; Coventry, Vt., $394,000; Cross City, Fla., $217,000; and Crowley-Jennings, La., $370,000.

D

Dansville, N. Y., $186,000; DeLand, Fla., $96,000; Dodge City, Kans., $210,000; Dothan, Ala., $156,000; Douglas, Ariz., $360,000; Dover, Del., $123,000; Dover-Foxcroft, Maine, $200,000; and Dunnellon, Fla., $250,000.

E

Eagle Pass, Tex., $45,000; East Hampton, N. Y., $372,000; El Centro, Calif., $300,000; El Dorado, Ark., $385,000; Elko, Nev., $100,000; Ellensburg, Wash., $321,000; Elmira, N. Y., $590,000; Ely-White Pine County, Nev., $365,000; Emporia, Va., $485,000; Enid, Okla., $320,000; Euphrata, Wash., $250,000; Eugene, Oreg., $113,000; and Eureka, Calif., $298,000.

F

Farmingdale, N. Y., $490 000; Fitchburg, Mass., $170,000; Flint, Mich., $467,000; Foley, Ala., $25,000; Fort Kent, Maine, $386,000; Ft. Lauderdale, Fla., $248,000; Fort Myers, Fla., $204,000; Ft. Pierce, Fla., $262,000; and Franklin, Va., $225,000.

G

Gadsden, Ala., $250,000; Gainesville, Fla., $169,000; Gainesville, Ga., $344,000; Galveston, Tex., $200 000; Gardner, Kans. (Johnson County), $110,000; Georgetown, Del., $160 000; Georgetown, Tex., $394,000; Gila Bend, Ariz., $146,000; Gilford, N. H. (Laconia), $30,000; Glens Falls, N. Y., $426,000; Gooding, Idaho, $248,000; Goldsboro, N. C., $65,000; Grand Forks, N. Dak., $180,000; Grand Junction, Colo., $300,000; Great Falls, Mont., $36,000; Greenville, Maine, $178,000; Greenville, S. C., $60,000; Greenville, Tex., $410,000; Greenwood, Miss., $235,000; and Gulfport, Miss., $404,000.

H

Hammond, La., $335,000; Hartford, Conn. (Brainerd Field), $65,000; Helena, Mont., $144,800; Helena-West Helena, Ark., $350,000; Hillsgrove, R. I. (Warwick-Rhode Island State), $46,000; Hobbs, N. Mex., $230,000; Houma, La., $380,000; Houston, Tex., $373,000; and Hyannis, Mass., $190,000.

I

Idaho Falls, Idaho, $165,301; and Independence, Calif. (Lone Pine), $233,000.

J

Jackson, Mich., (Reynolds Field), $352,000; Jackson, Miss. (Municipal #2), $50.000; Jacksonville, Fla., (Municipal #1), $188,000; Jacksonville, Fla. (Municipal #2), $290,000; Johnstown, Pa., $400,000; and Joplin, Mo., $300,000.

K

Kalamazoo, Mich., $60,000; Keene, N. H., $446,000; Kerrville, Tex., $299.000; Key West, Fla., $195,000; Kingsville, Tex., $166,000; Kissimmee, Fla., $233,000; Kitsap County, Wash. (Bremerton), $234 000; and Klamath Falls, Oreg., $278,000.

L

Lafayette, La., $375,000; La Grande, Oreg., $105,000; La Junta, Colo., $84,000; Lake City, Fla., $162,000; Lakeland, Fla. (Municipal #2), $260,000; Lake Wales, Fla., $217,000; Laredo, Tex., $45,000; Las Vegas, N. Mex., $281,000; Laurel, Miss., $283,000; Lawrence, Mass., $272,000; Leesburg, Fla., $336,000; Lewiston, Maine, $167,000; Lexington, Ky., $235,000; Logan, Utah, $360 000; Longview, Tex., $100,000; Louisville, Ky. (Municipal #2), $370,000; and Lynchburg, Va., $192,000.

M

McKean County, Pa. (Bradford-Kane), $560,000; Macon, Ga., $20,000; Madera, Calif., $312,000; Malone, N. Y., $413,000; Manteo, N. C., $404,000; Marathon Key, Fla., $234,000; Marfa, Tex., $218,000; Marianna, Fla., $254,000; Mathis, Tex., $178,000; Melbourne, Fla., $54,000; Memphis, Tenn., $73,000; Merced, Calif., $100,000; Miami, Fla. (Municipal #2), $260,000; Midland, Tex., $289,000; Miles City, Mont., $123,000; Millville, N. J. (Bridgeton Airport), $265,000; Mineral Wells, Tex., $78,000; Missoula, Mont., $70,000; Mobile, Ala., $260,000; Modesto, Calif., $161,000; Mojave, Calif., $205,000; Monroe, La., $388,000; Montgomery, Ala., $82,000; and Morristown, N. J., $222,000.

N

Nantucket, Mass., $274,000; Naples, Fla., $310,000; Natchitoches, La., $365,000; Needles, Calif., $270,000; Newark, N. J., $300,000; New Bern, N. C., $157,000; New Haven, Conn., $57,000; New Orleans, La. (Alvin Callander), $228,000; New Orleans, La. (Kenner Airport), $790,000; New York, N. Y. (Idlewild), $860,000; North Platte, Nebr., $70,000; and Norwood, Mass., $506,000.

O

Ocala, Fla., $70,000; Ogden, Utah, $301,000; Okeechobee, Fla., $282,000; Olympia, Wash., $100,000; Orangeburg, S. C., $308,000; and Orlando, Fla. (Municipal #2), $309,000.

P

Paducah, Ky., $430,000; Palatka, Fla., $227,000; Palestine, Tex., $363,000; Palm Springs, Calif., $300,000; Pascagoula, Miss. (Pascagoula #2), $232,000; Petersburg, Va., $593,000; Pittsburgh, Pa., $2,600,000; Pittsfield, Maine, $100,000; Plattsburg, N. Y., $386,000; Port Angeles, Wash., $22,000; Porterville, Calif., $280,000; Portland, Maine, $153,000; Portsmouth, N. H., $478,-

(*See* AIRPORTS, *page 215*)

Air Navigation Facilities

(August 1, 1941)

Airports

Airports with servicing [1]	978
Airports with paved runways	280
Airports with two-way radio	385
Lighted airports [2]	690
Airports by class:	
Municipal	1,028
Commercial	801
Private	25
Army	74
Navy	32
Misc. Gov't	41
C. A. A. Int. Flds	283
Total	2,284

Seaplane Bases

Army, Navy, Coast Guard, Marine Corps	36
Other seaplane bases and anchorages	325
Total	361
Seaplane bases having any night lighting equipment	20

Radio Aids

Ranges (8 simultaneous in Alaska and 2 in Hawaii)	296
Range stations simultaneous, with voice	193
Range stations nonsimultaneous, with voice	90
Range stations, no voice	13
Broadcast station (8 simultaneous and 2 nonsimultaneous in Alaska; 2 simultaneous in Hawaii)	117
Broadcast stations simultaneous	114
Broadcast stations, nonsimultaneous	3
Voice (only) stations (7 in Alaska)	17
Marker stations	38
Fan markers	130
Z markers (not at range station)	3

[1] Servicing: hangar, repairs, and fuel available.

[2] Lighted airport: boundary and beacon and/or flood lights.

Airport Bond Sales For First 6 Months Total $15,108,000

At least 60 cities, counties, and other political subdivisions of the United States sold bonds aggregating $15,108,000 for airport purposes during the first half of 1941, according to figures compiled by the Civil Aeronautics Administration.

This total does not include the issues reported as for public works or improvements in general, many of which probably were at least partially for airport purposes. In addition, not all the bond sales included in the compilation were for new airport development or improvement, several having as their object the refunding of prior issues or the extinguishment of previously incurred liens against the airport property.

Air Safety

Pilots Warned To Exercise Caution As Number Using Air Increases

Watch Take-Off, Landing, C. A. B. Bulletin Advises

A big increase in the number of civilian and military pilots using the air calls for more caution in taking off and landing. This is the warning carried in a recent bulletin of the Civil Aeronautics Board.

"Look all ways and be sure that your path is clear, by ground and in the air, before taking off," the bulletin stated. Full text of the bulletin follows:

Collision Caution Is the Price of Safe Air

As free as the breeze?—Yes, a wonderful feeling, but, *safe* air isn't as free as it was last year. It's in demand, and greater demand has boosted the price. It now costs more in caution and alertness. In addition to the huge increase in civilian fliers, this year finds a great number of military pilots using the air.

Be especially cautious in taking off and landing. Look all ways and be sure that your path is clear, by ground and in the air, before taking off. If you will remember that different planes have different landing speeds you won't have someone land on your back. Use the straight 1,000-foot approach and observe the rules of right-of-way. *Don't rely on the other pilot to see you. Watch out for him and, for the sake of courtesy of the air, give way to him.*

[Individual Accident Report]

Glider Stalled in Turn

On October 6, 1940, John Amour Scott, while making a glider flight near the Purdue University Airport, West Lafayette, Ind., was involved in an accident which resulted in his serious injury and major damage to the aircraft. Scott was uncertificated. The aircraft, a Purdue glider, Model PCC–11, was registered in the name of the Purdue Glider Club of Purdue University.

The glider, launched by a winch, was released at an altitude of about 1,400 feet on the final flight. The pilot, upon encountering thermals over the gravel pits situated to the east of the airport, utilized these updrafts to sustain flight by soaring over the pits several times. He was executing a turn at an altitude of about 450 feet preparatory to returning over the gravel pits when he encountered a downdraft. The glider stalled during the turn and fell off into a spin which continued until it struck the ground.

Subsequent investigation disclosed that a wind of about 25 m. p. h. velocity from the southwest prevailed at the time of the accident. Scott is a member of the glider club at Purdue, having made approximately 250 glider flights. The club did not have a certificated instructor in its employ.

Probable cause.—Pilot stalled the glider during turn at low altitude.

Air Accidents for June Listed in Board Report

Twenty-two fatal accidents occurred in United States civil aviation in June 1941, one more than occurred in June 1940, but seven less than occurred during May 1941, the Civil Aeronautics Board announced in releasing its monthly figures on fatal accidents. No fatal accidents occurred on scheduled airlines during the month, although domestic air carriers transported more than 350,000 passengers and flew approximately 11,500,000 revenue miles.

A tabulation follows which shows the factors figuring in the month's fatal accidents. The table notes that one such accident was charged to a student with an expired certificate and two were attributed to uncertificated pilots who carried passengers.

Factors	Instruction	Pleasure	Commercial	Other	No details	Total
Stalled in turn—simulated forced landing					1	1
Stalled in turn at low altitude	[1]1	[2]1				2
Stalled (Government flying)				1		1
Stalled in turn			[3]1			1
Spin and stall	1	[2]2				3
Fire in air	1					1
Crop dusting			2			2
Struck wires		2				2
Parachute jump			1			1
Undetermined			1		7	8
Totals	3	5	5	1	8	22

[1] Violation—expired student certificate.
[2] Violation—carrying passengers without certificate.
[3] Exhibition flying.

Ratings

(*Continued from page 203*)

powered landplane. If at another time he demonstrates his competence on multi-engine airplanes, whether landplane or seaplane, he would then be qualified to pilot airplanes of single-engine, land; single-engine, sea; multi-engine, land; and multi-engine, sea, throughout the entire horsepower range for which he is rated.

Endorsement requirements have been somewhat simplified. Periodic endorsement may be obtained for an aircraft type rating in the same manner as heretofore, namely, with 15 hours of solo flight time for the private grade, and 10 hours for the higher grades.

However, an airplane class rating may be endorsed for any grade of certificate with 5 hours time. This is quite similar to the previous requirement with respect to weight and engine classification as it applied to private pilots, but it now is extended to cover all grades of certificates. There are no periodic endorsement requirements with respect to the horsepower range rating, such rating continuing in effect as long as an airplane class rating remains valid.

The time required for each airplane class may be included in the total time required for the type endorsement. Time flown solo in classes other than those for which rated may also be included in this total, but it should be borne in mind that no passengers may be carried in any class except those for which rated.

An added item insofar as the regulations are concerned is the requirement that within the 90 days prior to carrying any passenger, a pilot of any grade must have made at least 3 take-offs and landings to a full stop in an airplane of the class, or if other than airplane, in an aircraft of the type, in which the passenger is to be carried. This will work no hardship on the conscientious pilot who undoubtedly follows such a procedure, nor on the average pilot who normally makes many more than 3 flights within such a period, but does serve as an additional safeguard in the case of the pilot who flies but infrequently.

In order for existing certificated pilots to be rated in accordance with the new procedure, it is necessary in the case of aircraft types other than airplane to show only sufficient time in the particular type for periodic endorsement, that is, 15 hours in 12 months, for private grade, or 10 hours in 6 months for the higher grades. In the case of airplane type, it also is necessary to show sufficient time in the type for periodic endorsement, but a rating for a class may be obtained by showing only 5 hours within the endorsement period in airplanes of a type, weight, and engine classification for which currently rated. The horsepower range will be established upon the basis of airplanes of any specific horsepower in which 5 hours is shown within the same period.

To illustrate the entire procedure, with a typical example, let us assume that an applicant for an original private grade certificate takes a flight test in a single-engine land airplane of 65 horsepower. He will then be rated as follows: Type, airplane; class, single-engine, land; horsepower range, 0–80. In actual practice, the word "airplane" will not be written on the rating record, but will be understood to apply when a class and horsepower range appear.

Endorsement

At the end of the endorsement period, or 1 year, our private pilot may secure endorsement of his certificate and retain his same rating if he has secured at least 15 hours in single-engine landplanes, regardless of the horsepower.

He now takes a rating flight test in a single-engine landplane of 130 horsepower and becomes eligible for the horsepower range of 80 to 195, but since he already has 0 to 80 he now is rated for the entire range of from 0 to 195.

It should be noted here that had the test in the 130-horsepower airplane been for original issuance of the certificate, the lower limit would not have been 50 percent less, or 65 horsepower, but rather 80 horsepower.

He subsequently takes instruction and eventually takes a rating flight test in a single-engine seaplane of 210 horsepower. This changes his class rating to single-engine, land and sea, and his horsepower range to 0 to 315. At the end of his next endorsement period, then, in order to maintain his current rating, he must have at least 5 hours in both single-engine landplanes and in single-engine seaplanes and a total of 15 hours in the airplane type but without regard to horsepower. This 15 hours may be composed of the 5 hours in each of the 2 classes for which he is rated and an additional 5 hours in any other class. *Of course, if he flies in a class for which he is not rated he may not carry passengers with him.*

To cite another example, a commercial pilot with a 4M land airplane rating comes up for endorsement. He has ample time in multi-engine land airplanes of 2,000 horsepower to obtain a type rating (10 hours) for airplane, a class rating (5 hours) for multi-engine landplanes, and a horsepower range of from 1,000 to 3,000. He subsequently takes a rating flight test in a single-engine seaplane of 420 horsepower. He thus has demonstrated competence in both single-engine and multi-engine airplanes and in both landplanes and seaplanes irrespective of the particular combinations in which he was tested and therefore, becomes eligible for a rating in all 4 classes; that is, single-engine, land; single-engine, sea; multi-engine, land; and multi-engine, sea airplanes, and for a horsepower range of from 210 (50 percent less than 420) to 3,000. Note that the 2 ranges need not necessarily overlap to make him eligible for the entire range which is from 50 percent less than the *lowest* to 50 percent greater than the *highest* horsepower at which he was tested.

Manufacturing and Production

New Type Approvals

(Approval numbers and dates of assignment in parentheses)

Type Certificates

Engines

Aviation Mfg., Lycoming 0–350, 6 cyl. horizontal opposed air cooled, 150 hp at 2500 rpm at sea level pressure altitude. Equipped with special accessories. (227, 7–14–41)

Propellers

Everel, 200–W–3, metal hub with wood blades, 6 ft. 10 in. diameter, automatic pitch, 200 hp, 2450 rpm. (770, 7–2–41)

New Models Added to Old Type Approvals

(Approval numbers and dates of approval of new models in parentheses)

Aircraft

Bellanca, 14–9L, 3 place closed land monoplane. Engine, Lenape Brave LM–5. (Type Certificate No. 716, 7–2–41)

Engines

Menasco, D4B, 4 cyl. in-line inverted air cooled, 160 hp at 2300 rpm (35.6 in. Hg.) at sea level pressure altitude. (Approved Type Certificate No. 134, 7–3–41)

Propellers

Sensenich, S6CSP, wood, 7 ft. 2 in. diameter, 6 ft. 4 in. to 6 ft. 0 in. pitch, 132 hp, 1975 rpm. (Approved Type Certificate No. 654, 7–3–41)

Sensenich, S6CASP, wood, 7 ft. 2 in. diameter, 6 ft. 4 in. to 6 ft. 0 in. pitch, 132 hp, 1975 rpm. (Approved Type Certificate No. 654, 7–3–41)

Sensenich, 74FC, wood, 6 ft. 2 in. diameter, 4 ft. 4 in. to 3 ft. 10 in. pitch, 75 hp, 2300 rpm. (Type Certificate No. 765, 7–5–41)

Sensenich, 74FD, wood, 6 ft. 2 in. diameter, 4 ft. 4 in. to 3 ft. 10 in. pitch, 90 hp, 2500 rpm. (Type Certificate No. 765, 7–5–41)

Defense Aero Contracts

The following aviation contracts have been awarded by the War Department and cleared by the Division of Purchases, Office of Production Management, during the period July 10 through July 23:

Bendix Aviation Corporation, Pioneer Instrument Division, Bendix, N. J., compasses and inverters, $820,500; Eclipse Aviation Division, supercharger regulator assemblies, $928,329.

The Glenn L. Martin Co., Baltimore, Md., spare parts, $3,666,020; airplane parts, $658,752; turret assemblies, $540,887.

New Jersey Fulgent Co., Metuchen, N. J., parachutes, $616,000.

Curtiss-Wright Corporation, Curtiss Propeller Division, Caldwell, N. J., propeller assemblies, $631,672; governor assemblies, $563,148.

Republic Aviation Corporation, Farmingdale, Long Island, N. Y., maintenance parts, $781,946.

Wright Aeronautical Corporation, Paterson, N. J., parts for engines, $4,338,093; tools, $838,648.

United Aircraft Corporation, Pratt & Whitney Aircraft Division, East Hartford, Conn., maintenance parts, $1,445,769.

North American Aviation, Inc., Inglewood, Calif., maintenance parts, $1,360,505.

Consolidated Aircraft Corporation, San Diego, Calif., maintenance parts, $568,087; spare parts, $4,003,941.

Vultee Aircraft, Inc., Vultee Field, Calif., maintenance parts, $1,374,115.

Douglas Aircraft Co., Inc., Santa Monica, Calif., spare parts, $1,524,863.

Lockheed Aircraft Corporation, Burbank, Calif., spare parts, $694,477.

Aviation Manufacturing Corporation, Lycoming Division, Williamsport, Pa., aircraft engines, $1,048,453; aeronautical engines, $16,945,430.

Aviation Gasoline Exports Increase

Production of aviation gasoline was off slightly but exports gained sharply in May as compared with the previous month, figures compiled by the Bureau of Mines indicate.

In May 1,573,000 barrels of aviation gasoline were produced, as against 1,633,000 barrels in April, and 1,185,000 barrels in May 1940. Exports, which sagged to 63,000 barrels during April, climbed to 373,000 barrels in May, compared with 487,000 in May of last year. The May 1941 export figure includes 6,000 barrels of antiknock compound.

Total production for the first five months of 1941 was 7,458,000 barrels, compared with 5,947,000 barrels for a similar period in 1940. Exports during the first five months of 1941 totaled 1,728,000 barrels, compared with 1,690,000 barrels in the same period last year.

Stocks in May of this year totaled 7,636,000 barrels, as against 7,347,000 barrels in April, and 5,514,000 in May of last year. Domestic demand in May 1941 was 647,000 barrels; in April 1941 it was 812,000 barrels; and in May 1940 it was 362,000 barrels.

Aero Employment Gains 9,900 Workers in June

The aircraft industry in June employed 186,000 persons, an increase of 9,900 workers from May, according to estimates of the Department of Labor.

The gain during June brought the index of aircraft employment to 6,648.2 percent of the 1923–25 average, compared with 6,293.8 percent in May and 2,913.5 percent in June 1940. The pay roll index figure for June was 8,125.9 percent against 7,700.9 percent for May and 2,968.2 percent in June last year.

CIVIL AERONAUTICS BOARD

OFFICIAL ACTIONS

Abstracts of Opinions, Orders, and Regulations

FOR THE PERIOD JULY 15–31, 1941

ORDERS

ORDER No. 1141 *July 16, 1941*

Instituted a proceeding to determine whether any certificate of public convenience and necessity issued to Eastern Air Lines, Inc., under its application for a certificate authorizing air transportation between Louisville, Ky., and Savannah, Ga., should include the City of Spartanburg, S. C., and consolidated the proceedings.

ORDER No. 1142 *July 16, 1941*

Amended the order (Serial No. 682) instituting a proceeding for fixing and determining fair and reasonable rates of compensation for the transportation of mail by Pennsylvania-Central Airlines Corp., so as to include routes 32 and 55, as amended.

ORDER No. 1143 *July 18, 1941*

Granted Northwest Airlines permission to serve Grand Forks, N. Dak., through the use of the Grand Forks Municipal Airport, beginning August 1, 1941.

ORDER No. 1144 *July 18, 1941*

Denied petition of Canadian-Colonial Airways, Inc., for permission to intervene in the applications of Pennsylvania-Central Airlines Corp., Eastern Air Lines, Inc., and Transcontinental & Western Air, Inc., for amendments to their certificates of public convenience and necessity so as to authorize service to Atlantic City, N. J.

ORDER No. 1145 *July 18, 1941*

Reissued to Pan American Airways, Inc., the certificate of public convenience and necessity held by Panama Airways, Inc.

ORDER No. 1146 *July 18, 1941*

Reissued to Pan American Airways, Inc., the certificates of public convenience and necessity held by Pacific Alaska Airways, Inc.

ORDER No. 1147 *July 18, 1941*

Approved interlocking relations of John O. Merckling and Pan American Airways Co. and subsidiaries.

ORDER No. 1148 *July 18, 1941*

Vacated Order, Serial No. 1138, re John H. Nance, Jr., holder of commercial pilot certificate No. 70219.

ORDER No. 1149 *July 18, 1941*

Authorized the taking of depositions prior to the hearing in the matter of John H. Nance, Jr., holder of commercial pilot certificate No. 70219.

ORDER No. 1150 *July 23, 1941*

Authorized the transfer to British Overseas Airways Corp. of the permit issued to Airways (Atlantic) Limited authorizing foreign air transportation between the United States and the United Kingdom, and of the permit issued to Imperial Airways (Bermuda) Limited authorizing foreign air transportation between the United States and Bermuda. (Opinion and order—Docket No. 614.) (Signed by the President July 18.)

ORDER No. 1151 *July 7, 1941*

Granted applications of Canadian-Colonial Airways, Inc., for amendment of its certificate of public convenience and necessity so as to authorize Burlington, Vt., as an intermediate point, Glens Falls, N. Y., as an intermediate point from June 1 to September 30 of each year, and to authorize air transportation between New York, N. Y., and Albany, N. Y., without continuing such trips to Montreal or to any other point; denied application for service to and from Lake Placid, N. Y. (Opinion and order—Docket Nos. 377, 402, 494). (Signed by the President July 18.)

ORDER No. 1152 *July 9, 1941*

Granted application of Western Air Lines, Inc., for amendments to its certificates of public convenience and necessity so as to reflect the change of name from Western Air Express Corp. (Opinion and order—Docket No. 579.) (Signed by the President July 18.)

ORDER No. 1153 *July 21, 1941*

Reopened for further hearing the applications of various companies for certificates of public convenience and necessity authorizing air transportation within the Territory of Alaska and the application for the approval of the merger of Alaska Air Transport, Inc., and Marine Airways, Inc. (Opinion and order—Docket No. 71–401–E–1 et al.)

ORDER No. 1154 *July 21, 1941*

Granted request of Star Air Lines, Inc., for leave to withdraw its applications for a certificate of public convenience and necessity authorizing air transportation between Juneau and Fairbanks, Alaska, and between Anchorage and Nome, Alaska.

ORDER No. 1155 *July 22, 1941*

Consolidated for the purpose of hearing the applications of American Airlines, Inc., Transcontinental & Western Air, Inc., and Western Air Lines, Inc., for certificates of public convenience and necessity and amendments of existing certificates; and granted request of Transcontinental & Western Air, Inc., for permission to withdraw an application.

ORDER No. 1156 *July 22, 1941*

Revoked private pilot certificate No. 58180, held by Martin Garson, San Diego, Calif., for piloting an aircraft acrobatically over an airport and other violations of the Civil Air Regulations.

ORDER No. 1157 *July 22, 1941*

Consolidated for the purpose of hearing the applications of Canadian-Colonial Airways, Inc., Eastern Air Lines, Inc., and National Airlines, Inc., for certificates of public convenience and necessity.

ORDER No. 1158 *July 22, 1941*

Granted the application of Catalina Air Transport for an amendment to its certificate of public convenience and necessity so as to reflect the change of name from Wilmington-Catalina Airline, Ltd., and to authorize air transportation of persons and property except mail between Avalon, Catalina Island, and Los Angeles, Calif., via Wilmington-Long Beach. (Opinion and order—Docket No. 538.)

ORDER No. 1159 *July 24, 1941*

Revoked student pilot certificate No. S–52234, held by Clifford Joseph Ducharme, Manitowoc, Wis., for giving flight instruction to student pilots and other violations of the Civil Air Regulations.

ORDER No. 1160 *July 25, 1941*

Approved a modification of an agreement between United Air Lines Transport Corporation and Western Air Lines, Inc. (Contract C. A. B. 100–A) relating to temporary loan of airplanes for emergency use, so as to extend the

routes on which Western may use such equipment.

ORDER No. 1161 *July 25, 1941*

Approved a resolution (Contract C. A. B. 128–A) of the Air Traffic Conference of America, as amended, relating to all-expense tours.

ORDER No. 1162 *July 25, 1941*

Denied petition of American Airlines, Inc., to reopen the record in the proceeding for the determination of fair and reasonable rates of compensation for the transportation of mail.

ORDER No. 1163 *July 28, 1941*

Reopened proceeding in the matter of the petition of United Air Lines Transport Corporation for an order fixing and determining fair and reasonable rates of compensation for the transportation of mail by aircraft over Routes Nos. 1, 11, 12, and 17.

ORDER No. 1164 *July 29, 1941*

Revoked student pilot certificate No. S–159374 held by Lowell Townsend Moffitt, Long Beach, Calif., for piloting an aircraft on a civil airway at an altitude of approximately 75 feet over a congested area and other violations of the Civil Air Regulations.

ORDER No. 1165 *July 29, 1941*

Granted Transcontinental & Western Air, Inc., permission to inaugurate service to Reading, Pa., on route No. 2, through the use of the Reading Municipal Airport on August 1, 1941.

ORDER No. 1166 *July 29, 1941*

Granted permission to Transcontinental & Western Air, Inc., to inaugurate on August 1, 1941, nonstop service between Reading, Pa., and Pittsburgh, Pa., between Reading and New York, N. Y., and between Reading and Newark, N. J., on route No. 2.

ORDER No. 1167 *July 7, 1941*

Denied application of Pan American Airways for a certificate of convenience and necessity authorizing air transportation between Los Angeles, Calif., and Mexico City, Mexico. (Opinion and order—Docket No. 318.) (Approved by the President July 29, 1941.)

ORDER No. 1168 *July 31, 1941*

Granted Pennsylvania-Central Airlines Corp. permission to inaugurate service at Morgantown, W. Va., through the use of the Morgantown Airport, on August 3, 1941.

REGULATIONS

REGULATION No. 173 *July 21, 1941*

Adopted Section 292.2 of the Economic Regulations CLASSIFICATION and EXEMPTION OF ALASKAN AIR CARRIERS. The full text follows:

(a) CLASSIFICATION OF ALASKAN AIR CARRIERS. There is hereby established, within the meaning of section 416 (a) of the Civil Aeronautics Act of 1938, a classification of air carriers which engage solely in air transportation within the Territory of Alaska, said classification to be designated as "Alaskan Air Carriers."

(b) TERMINATION OF EXISTING EXEMPTION OF ALASKAN AIR CARRIERS. On and after the effective date of this regulation, section 292.1 of the economic regulations (formerly designated as Regulation 400–1) temporarily exempting nonscheduled operations from certain provisions of Title IV of the Civil Aeronautics Act of 1938, shall not be applicable to operations to, from, and within the Territory of Alaska.

(c) TEMPORARY EXEMPTION OF ALASKAN AIR CARRIERS. Until the Board shall adopt further rules, regulations or orders, any Alaskan air carrier that has filed with the Board on or before the date of this order an application for a certificate of public convenience and necessity shall be exempt from the provisions of Title IV of the Civil Aeronautics Act of 1938, except subsection (1) of section 401 in respect of air transportation wholly within the Territory of Alaska.

This regulation shall become effective twenty days after the date hereof.

REGULATION No. 174 *July 29, 1941*

Adopted Amendment No. 122 of the CAR, FIRST AID EQUIPMENT FOR AIR CARRIER AIRCRAFT. The full text follows:

Effective October 1, 1941, Part 61 of the Civil Air Regulations is amended by the addition of a new subsection 61.340 to read as follows:

"*61.340 First aid equipment.*—No aircraft shall be operated in scheduled air transportation unless equipped with a conveniently accessible first aid kit adequate for proper first aid treatment of passengers and crew which shall contain certain medical equipment and supplies approved by the Administrator as suitable and sufficient for the type of operation involved.

Airports

(*Continued from page 211*)

000; Prescott, Ariz., $295,000; Princeton, Maine, $97,000; Provo, Utah, $325,000; and Pueblo, Colo., $84,000.

R

Raleigh-Durham, N. C., $300,000; Red Bluff, Calif., $196,000; Richmond, Va. (Richard E. Byrd), $646,000; Roanoke, Va., $180,000; Rochester, N. Y., $161,000; Rockland, Maine, $112,000; Rock Springs, Wyo., $60,000; Rocky Mount, N. C., $185,000; and Rutland, Vt., $422,000.

S

Sacramento, Calif., $344,000; Safford, Ariz., $222,000; Saginaw-Bay City, Mich. (Tri-City Airport), $527,000; St. Augustine, Fla., $173,000; St. Petersburg, Fla. (Pinellas County), $386,000; Salisbury, Md., $380,000; Salt Lake City, Utah (Municipal #2), $230,000; San Bernardino, Calif., $213,000; Sanford, Fla., $215,000; Sanford, Maine, $100,000; Santa Fe, N. Mex., $170,000; Santa Barbara, Calif., $385,000; Santa Rosa, Calif., $280,000; Saranac Lake, N. Y., $550,000; Sarasota-Manatee, Fla., $185,000; Savannah, Ga. (Municipal #2), $16,000; Schenectady, N. Y., $483,000; Seattle, Wash. (King County Airport), $78,000; Shawnee, Okla., $285,000; Sheridan, Wyo., $125,000; Silverlake, Calif., $146,000; Skowhegan, Maine, $210,000; Socorro, N. Mex., $320,000; Somerset, Pa., $250,000; Spartanburg, S. C., $150,000; Spokane, Wash. (Felts Field), $194,000; Starkville, Miss., $290,000; Statesboro, Ga., $350,000; and Sweetwater, Tex., $107,000.

T

Tampa, Fla. (Hillsborough County), $283,000; Temple, Tex., $335,000; Texarkana, Ark., $429,000; The Dalles, Oreg., $90,000; Tucson, Ariz., $223,000; Tucumcari, N. Mex., $302,000; Tulsa, Okla. (Municipal #1), $87,000; and Tyler, Tex., $363,000.

U

Ukiah, Calif., $180,000; and Utica, N. Y., $166,000.

V

Valle, Ariz., $25,000; Vernon, Tex., $270,000; and Vero Beach, Fla., $191,000.

W

Waco, Tex., $180,000; Walla Walla, Wash., $59,000; Walterboro, S. C., $322,000; Watertown, N. Y.; $389,000; Waycross, Ga., $288,000; Wenatchee, Wash., $210,000; Westfield, Mass., $87,000; West Lebanon, N. H., $159,000; West Palm Beach, Fla. (Lantana-Municipal #2), $195,000; Whitefield, N. H., $403,000; Wilkes-Barre, Pa. (Wilkes-Barre–Scranton), $900,000; Williamsport, Pa., $100,000; Willimantic, Conn., $185,000; Willows, Calif., $110,000; Wilmington, Del., $523,000; Winfield-Arkansas City, Kans., $214,000; Winslow, Ariz., $30,000; Winter Haven, Fla., $188,000; and Winterport, Me., $393,000.

Y

Yakima, Wash., $55,000; Yuba-Marysville, Calif., $180,000; and Yuma, Ariz., $135,000.

Z

Zephyrhills, Fla., $234,000.

Flight Test

(*Continued from page 202*)

snap rolls on the placard prepared by Flight Engineering and Factory Inspection Section, which is installed in the cockpit of all airplanes used in this stage of the C. P. T. Program. This placard includes recommended entry speeds for all maneuvers used in the acrobatic course, and in this way, the student and instructor are warned against the use of dangerously high speeds and are informed of entry speeds that will produce satisfactory handling qualities.

To date, 45 different types of airplanes have been tested for use in this program, 31 of which are now in service, and 14 were found to be either definitely dangerous or otherwise unsatisfactory for use in this type of training.

Pilots

(*Continued from page 201*)

and Navy aviation by June 1, and, in addition, 1,279 C. A. A. instructors had joined defense units here or in Canada.

The C. A. A. is continuing its work as a feeder to the armed air services by giving elementary flight training this summer to approximately 11,000 candidates; 3,000 are taking the secondary course, and 2,000 are being trained as instructors.

11 Billion for Planes

Planned expenditures for airplanes in national defense have reached $11,957,000,000, largest single item in the total defense fiscal picture, according to an analysis of United States and British commitments in this country issued by the Office of Production Management's Bureau of Research and Statistics.

Authorized defense expenditures for all purposes totaled $50,785,000,000 as of July 26, the O. P. M. report indicated.

Status of Parts of the Civil Air Regulations and Amendments

As of August 1, 1941

All persons affected by the Civil Air Regulations, including those preparing for examinations for certificates, may obtain required Parts of the Regulations from the Publications and Statistics Division, Civil Aeronautics Administration, Washington, D. C., without charge.

ONLY PARTS NEEDED SUPPLIED FREE

For example, *pilots* are governed in general by Parts 01., 20., 60., and 98; *aircraft mechanics* by Parts 01., 04., 15., 18., 24., 98., and Section 60.32; and *aircraft engine mechanics* by Parts 01., 04., 13., 14., 18., 24. and 98. It should be remembered that individuals are entitled to receive free of charge only those portions of the C. A. R. which directly govern the activity in which they are engaged and this activity must be definitely stated when request is made.

HOW TO OBTAIN PARTS, AMENDMENTS, AND MANUALS

Those persons not affected by the C. A. R., but desiring all or any part of the Regulations for other purposes, may obtain them as follows: Those Parts on which a price is listed in the tabulation below are on sale by the Superintendent of Documents, U. S. Government Printing Office (shown as G. P. O. in table), Washington, D. C., and are not available for free distribution except as stated in the first paragraph.

Eventually, all Parts will be placed on sale; meanwhile, Parts not yet on sale (carrying remark in tabulation below "order from C. A. A. only") may be obtained without charge from the C. A. A. upon demonstration of valid interest on the applicant's part.

ALL AMENDMENTS TO THE CIVIL AIR REGULATIONS, AND NOTICE OF NEW PARTS, ARE PRINTED IN THE OFFICIAL ACTIONS SECTION OF THE CIVIL AERONAUTICS JOURNAL, AS RELEASED.

The tabulation below carries in the right-hand column the numbers of all effective amendments to each Part issued subsequent to its publication. Parts ordered from C. A. A. include all effective amendments, but when Parts are purchased from G. P. O. amendments must be requested separately from C. A. A.

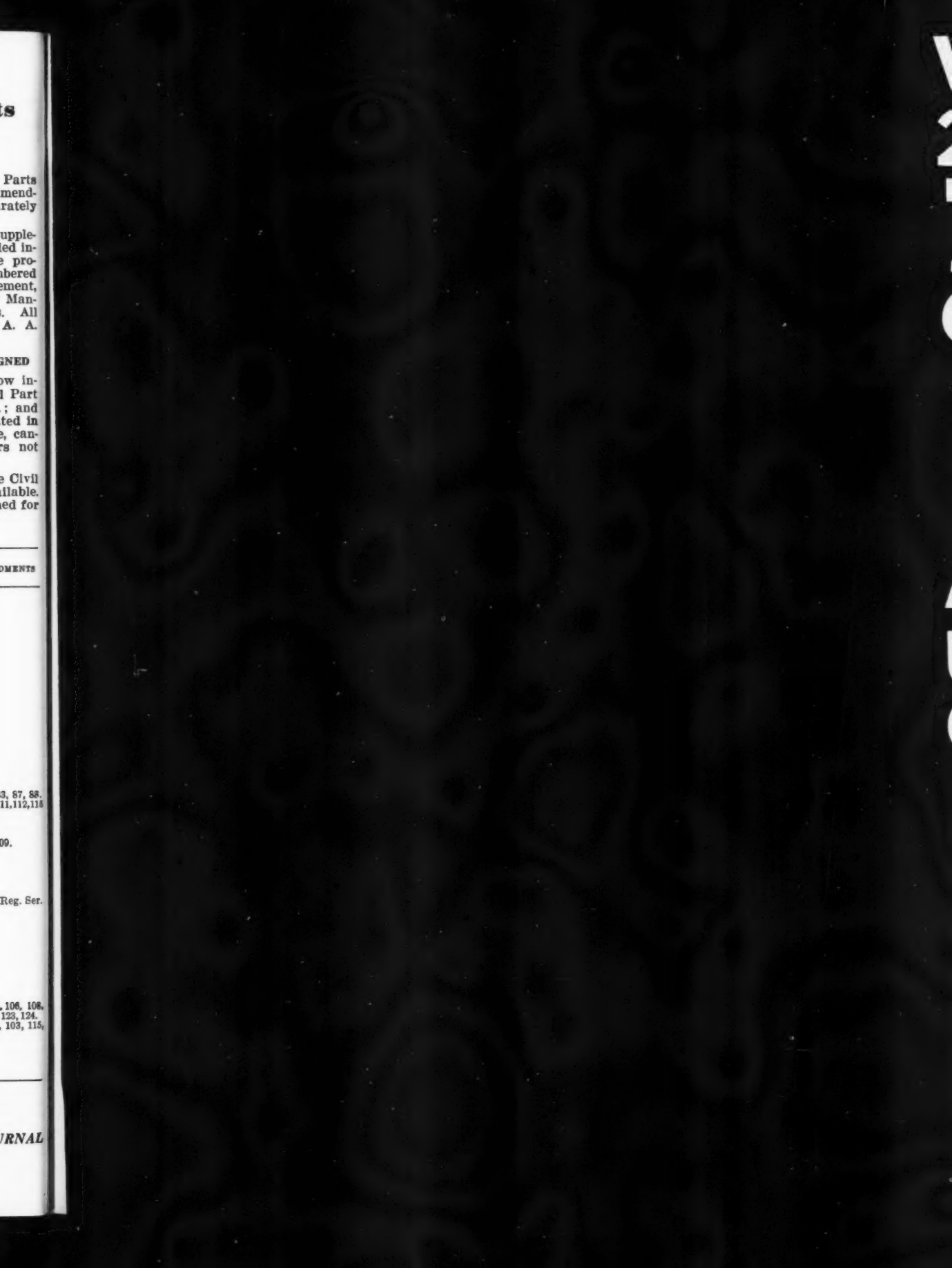
Civil Aeronautics Manuals supplementing certain Parts with detailed interpretations of their respective provisions are issued. They are numbered the same as the Parts they supplement, and those Parts accompanied by Manuals carry appropriate notations. All Manuals are obtained from C. A. A. only, without charge.

PARTS CANCELLED AND UNASSIGNED

Cancelled Parts 00. and 03. now incorporated in Part 01.; cancelled Part 23. now incorporated in Part 51.; and cancelled Part 25. now incorporated in Part 24. Parts 90.–96., inclusive, cancelled. All other Part numbers not shown are unassigned.

Bound volumes of the complete Civil Air Regulations are no longer available. Parts and amendments are punched for filing in loose-leaf binders.

Part No.	Title	Date	Remarks	Price	Effective Amendments
	AIRCRAFT				
01	Aircraft Registration and Airworthiness Certificates.	6-1-41	In stock at C. A. A. and on sale at G. P. O.	$0.05	
02	Type and Production Certificates	3-1-41	In stock at C. A. A. and on sale at G. P. O.	.05	
04	Airplane Airworthiness (Manual 04, 2-1-41.[1])	4-1-41	In stock at C. A. A. and on sale at G. P. O.	.15	116.
13	Aircraft Engine Airworthiness (Manual not issued).	8-1-41	In stock; order from C. A. A. only		
14	Aircraft Propeller Airworthiness (Manual 14, 12-1-38).	11-15-40	In stock; order from C. A. A. only		
15	Aircraft Equipment Airworthiness (Manual 15, 7-1-38).	11-15-40	In stock; order from C. A. A. only		
16	Aircraft Radio Equipment Airworthiness (Manual, 2-13-41).	2-13-41	In stock at C. A. A. and on sale at G. P. O.	.05	
18	Maintenance, Repair, and Alteration of Certificated Aircraft and of Aircraft Engines, Propellers, and Instruments. (Manual 18, 6-1-41.)	6-1-41	In stock; order from C. A. A. only		
	AIRMEN				
20	Pilot Certificates	5- 1-40	In stock at C. A. A. and on sale at G. P. O.	.05	63, 65, 67, 75, 82, 83, 87, 88, 99, 101, 107, 110, 111, 112, 116 117, 118.
21	Airline Transport Pilot Rating	11-15-40	In stock; order from C. A. A. only		87, 101, 115.
24	Mechanic Certificates	5- 1-40	In stock at C. A. A. and on sale at G. P. O.	.05	44, 61, 73, 75, 87, 109.
26	Air-Traffic Control-Tower Operator Certificates	10-4-40	In stock at C. A. A. and on sale at G. P. O.	.05	87.
27	Aircraft Dispatcher Certificates	7-15-40	In stock at C. A. A. and on sale at G. P. O.	.05	74, 75, 87.
	AIR CARRIERS				
40	Air Carrier Operating Certification (Interstate)	11-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	85, 89, 102. Spec. Reg. Ser. 172.
	AIR AGENCIES				
50	Flying School Rating (Manual 50, 12-40[2])	11-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	87, 113.
51	Ground Instructor Rating	5-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	75, 87.
52	Repair Station Rating (Manual 52, 2-41)	5-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	75, 84, 87.
53	Mechanic School Rating (Manual 53, 5-40)	9-15-40	In stock at C. A. A. and on sale at G. P. O.	.05	75, 87.
	AIR NAVIGATION				
60	Air Traffic Rules (Manual 60; Part 1, 12-1-40; Part 2, 8-1-40; Part 3, 12-1-40).	10-4-40	In stock at C. A. A. and on sale at G. P. O.	.10	80, 90, 93, 102, 104, 106, 108, 114, 119, 120, 121, 123, 124.
61	Scheduled Air Carrier Rules (Interstate)	1-1-41	In stock; at C. A. A. and on sale at G. P. O.	.05	91, 94, 97, 100, 102, 103, 115, 120, 122.[3]
	MISCELLANEOUS				
98	Definitions	11-15-40	In stock; order from C. A. A. only		
99	Mode of Citation of Regulations	11-15-40	In stock; order from C. A. A. only		

[1] Amendment as issued by C. & I. Div. Release No. 50, 6-3-41.
[2] Amendment 4-14-41 issued by C. & I. Div. Release No. 45.
[3] Effective 10-1-41.

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